Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services

STATEMENT OF BASIS

Sterling Sugars Inc
Franklin St. Mary Parish, Louisiana
Agency Interest Number: 1304
Activity Number: PER20090001
Proposed Permit Number: 2660-00001-V3

I. APPLICANT

Company:
Sterling Sugars Inc
611 Irish Bend Rd
Franklin, Louisiana 70538

Facility:
Sterling Sugars Inc
609 Irish Bend Rd
Franklin, St. Mary Parish, Louisiana
Approximate geographic coordinates: 29° 48' 12" North, 91° 29' 33" West.

II. FACILITY AND CURRENT PERMIT STATUS

Sterling Sugars, Inc. operates a raw sugar mill near Franklin that began in 1807. Sterling Factory is a raw sugar mill that crushes sugar cane and produces raw sugar and final molasses. The plant is covered by Standard Industrial Classification (SIC) 2061. Sugar cane is crushed in the mill to extract its juice. Juice is then clarified and evaporated to thick syrup, which is further concentrated to cause crystallization. Raw sugar crystals are separated from the mother liquor in centrifuges; the liquor is returned to process for additional concentration and extraction of raw sugar. After recovering as much sugar as possible from the mother liquor, the resulting final molasses is stored for sale to buyers. Fibrous residue from the cane crushing process is called bagasse and is used to fuel steam generators specifically designed to burn this material. The steam generated is used to drive prime movers and to provide process heat for juice concentration and sugar crystallization.

III. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application and Emission Inventory Questionnaire were submitted by Sterling Sugars, Inc. on February 2, 2009 requesting a Part 70 operating permit

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modification. Additional information was also received on February 20, 2009, April 22, 2009, and August 14, 2009.

Project

Sterling Factory currently operates under Permit No. 2660-00001-V2. Permit No. 2660-00001-V1 was issued on September 17, 2004 after the addition of Boiler No. 7 (150,000 lb steam/hr). Boilers No. 1 and 2 were installed in 1961 and are rated for 100,000 lb steam/hr each. Boiler No. 3 was installed in 1977 and is rated at 100,000 lb steam/hr. Boilers No. 4 and 5 were reconstructed in 1996 and are each rated for 45,352 lb steam/hr. Boiler No. 6 was retrofitted in 1998 and is rated at 100,000 lb steam/hr. The exhaust from each boiler goes through a multi-cyclone fly ash collector and wet scrubber for pollution control. All boilers will normally be fired with bagasse exclusively, but Boilers 1, 2, and 6 (only) are fitted with gas burners for auxiliary fuel firing.

The permit modification is intended to correct rated capacities for Boilers 1, 2, 3, and 6 (and associated emissions calculations) and to remove natural gas emissions from calculations for Boilers 3, 4, 5, and 7 (these boilers do not have natural gas burners).

Emissions calculations in previous permits correspond with the production of 2.17 lb steam/lb bagasse for all boilers; however this is changed in all calculations for this permit modification. A value of 2.00 lb steam/lb bagasse, based on AP-42 [AP-42 1.8-4, 10/96] was used for Boilers No. 3 and 7. The AP-42 NO_x emission factor (1.20 lb NO_x per ton of bagasse) is used in emissions calculations for all boilers except Boilers No. 3 and 7.

This permit modification also incorporates stack test data from November 25, 2008 for Boiler No. 7. This stack test, conducted at 122,810 lb steam/hr, identified a NO_x emission rate (51.76 lb/hr) higher than the maximum lb/hr NO_x emissions in the current permit.

The boilers operate under a federally enforceable CAP, which will change with this modification. The total NOx emission rate will increase from 207.99 tons per year to 220.94 tons per year. This change is necessary due to the aforementioned stack test that was conducted for Boiler No. 7.

Proposed Permit

Permit 2660-00001-V3 will be the Part 70 operating permit modification for the Sterling Sugars facility.

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Permitted Air Emissions

Estimated emissions in tons per year are as follows:

Pollutant	Before	After	Change
PM_{10}	117.17	117.17	--
SO_2	0.06	0.06	--
NO_X	207.99	220.94	+ 12.95
CO	233.40	233.40	--
VOC	15.85	15.85	--
HCl	0.004	0.004	--

IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.

Applicability and Exemptions of Selected Subject Items

EQT 3 – 6, 8 Boilers 1 – 4, 6	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units [40 CFR 60, Subpart Db]	DOES NOT APPLY. No construction, modification, or reconstruction after 6/19/84.
EQT 7 Boiler 5	Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units [40 CFR 60, Subpart Db]	DOES NOT APPLY. Heat capacity from fuels combusted in the boiler is less than 100 million BTU/hr. Boiler is subject to 40 CFR 60 Subpart Dc
EQT 3-8, 12 (All Boilers)	Emission Standards for Sulfur Dioxide Continuous Emissions Monitoring [LAC 33:III.Chapter 15]	DOES NOT APPLY. Sources have the potential to emit less than 5 tons per year of sulfur dioxide.
EQT 9 HCl Storage Tank	Control of Emission of Organic Compounds [LAC 33:III.2131.A]	EXEMPT. Facilities with throughput < 500,000 gallons per year are exempted from installing vapor recovery systems for displaced vapors.

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EQT11 Diesel Storage Tank	Standards of Performance for Storage Vessels of Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973 and Prior to May 19, 1978. [40 CFR 60, Subpart K]	DOES NOT APPLY. Stored liquid does not meet definition of petroleum liquid per § 60.111 (b).
EQT11 Diesel Storage Tank	Control of Emission of Organic Compounds [LAC 33:III.2131.A]	DOES NOT APPLY. True vapor pressure is < 1.5 psia.

Prevention of Significant Deterioration/Nonattainment Review

The Sterling Sugars facility is not a major stationary source because emissions of all pollutants are below the major source threshold. Therefore, PSD does not apply.

MACT Requirements

This facility is a minor source of toxic air pollutants (TAPs) pursuant to LAC 33:III.Chapter 51. Therefore, MACT is not required.

Air Quality Analysis

Emissions associated with the proposed modification were reviewed by the Air Quality Assessment Division to ensure compliance with the NAAQS and AAS. LDEQ did not require the applicant to model emissions.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to the Section VIII – General Condition XVII Activities of the proposed permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to the Section IX – Insignificant Activities of the proposed permit.

V. PERMIT SHIELD

There is no permit shield.

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VI. PERIODIC MONITORING

Compliance Assurance Monitoring (CAM) – 40 CFR 64

Federal regulation 40 CFR 64-Compliance Assurance Monitoring is applicable to this facility. Applicability for each pollutant requires that the unit be subject to an emission limitation or standard and must use an active control device to achieve compliance. The following emission sources with pollution control equipment have a pre-control emission rate of PM_{10} over 100 tons per year and were determined to require a CAM Plan: Bagasse Boilers No. 1 – 7 (EQTs 3 -8, respectively), and Boiler No. 7 (EQT 12). Each of these sources utilizes a multiclone and a wet scrubber to control emissions of PM_{10}.

The multiclones serve to collect and reduce particulate emissions associated with the combustion of bagasse. Opacity is used to determine if particulate emissions are exceeded. Examinations of emissions from the multiclones are conducted to determine the efficiency. These examinations occur daily and are conducted in accordance with 40 CFR 60, Appendix A Method 9 using a trained observer. Should the opacity check result in an observation of excess emissions, the multiclones will be inspected and if necessary, repaired. In addition, semiannual inspections of the multiclones will be conducted to determine if repair is necessary. Excursions or exceedances will be noted in a logbook.

The wet scrubber is used to reduce particulate emissions associated with the combustion of bagasse. The pressure of the water being sprayed will be monitored once every four hours to ensure it remains within the range necessary to keep the particulate emissions below permitted limits. If the scrubber water pressure is out of the permitted operational range, then the excursion will be noted in a logbook.

Six (6) excursions or exceedances within a twelve consecutive month period is the threshold limit for the implementation of a Quality Improvement Plan, which shall be prepared as expeditiously as possible.

VII. GLOSSARY

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Maximum Achievable Control Technology (MACT) – The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

Hydrogen Sulfide (H_2S) – A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the reaction of acids on metallic sulfides, and is an important chemical reagent.

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New Source Review (NSR) – A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C ("Prevention of Significant Deterioration of Air Quality") and D ("Nonattainment New Source Review").

Nitrogen Oxides (NO_X) – Compounds whose molecules consist of nitrogen and oxygen.

Organic Compound – Any compound of carbon and another element. Examples: Methane (CH_4), Ethane (C_2H_6), Carbon Disulfide (CS_2)

Part 70 Operating Permit – Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: ≥ 10 tons per year of any toxic air pollutant; ≥ 25 tons of total toxic air pollutants; and ≥ 100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM_{10} – Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) – The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO_2) – An oxide of sulfur.

Sulfuric Acid (H_2SO_4) – A highly corrosive, dense oily liquid. It is a regulated toxic air pollutant under LAC 33:III.Chapter 51.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) – Any organic compound, which participates in atmospheric photochemical reactions; that is, any organic compound other than those, which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.